REINFORCED PLASTIC COMPOSITES NESHAP

Interpretation and Implementation of the Final Rule

For the Composites Fabricators Association Annual Meeting

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Outline

- How do I determine if the rule applies to me?
- What operations are covered and have requirements?
- What operations are covered and have no requirements?
- What if I manufacture fiberglass boats or boat parts?
- When do I have to comply?
- What are the corrections and clarifications we are planning to add to the final rule?
- Am I a new or existing source?
- In what are the general requirements?
- How do I demonstrate initial compliance?
- Frequently asked questions
- Other questions

Where do I find information on the final rule?

- Go to the rule web page at http://www.epa.gov/ttn/atw/rpc/rpcpg.html
- Rule text and implementation materials are available on this web site
- As new implementation materials are developed, they will be added
- For questions concerning applicability and rule determinations, contact the appropriate State, local, or EPA regional office
- Feel free to cc me on these questions at barnett.keith@epa.gov

Who is subject to this standard?

- You are subject to this standard if you:
  - Manufacture reinforced plastics composites at a facility that is located at a major source (10 tpy of any one HAP or 25 tpy of any combination of HAP), and
  - Use thermoset resins or gel coats that contain styrene
- You are not subject to this standard if you:
  - Use less than 1.2 tpy of styrene containing resins and gel coats, or
  - Only perform research and development, or
  - Only repair reinforced plastic composites, or
  - Are an area source

What operations are covered and have some type of control requirements?

- Open Molding
- Compression/injection Molding
- Centrifugal Casting
- Continuous Lamination/Casting
- SMC/BMC Manufacturing
- Pultrusion
- Mixing
- Storage
- Equipment Cleaning

What operations are covered, and have no requirements?

- Polymer Casting
- Resin Transfer Molding (RTM)
- Application of mold sealing and release agents
- Mold stripping and cleaning
- Repair unrelated to your manufacturing operations
- Materials that do not contain resin or gel coat
- Personal activities not part of manufacturing operations
- Prepreg materials
- Non-gel coat surface coatings
- Research and development operations

What if I Manufacture Fiberglass Boats or Boat Parts?

- You are subject to the Boat Manufacturing NESHAP only if you manufacture boat hulls or decks, or molds for boat hulls or decks

- If you are not subject to the Boat Manufacturing NESHAP, you are subject to this rule

- If you are subject to the Boat Manufacturing NESHAP, but make parts that are not part of your boats, the non-boat operations are subject to this rule

- You may elect to place all operations under the Boat Manufacturing NESHAP if that results in equal or lower HAP emissions

When do I have to comply?

- The final rule was published on April 21, 2003
- Existing major sources must comply by April 21, 2006
- Operating new major sources should have complied by April 21, 2003, or startup, whichever was later
- New major sources under construction must comply at startup

Corrections and Clarifications Planned

- Correct three round-off errors in Table 3
  - CR/HS mechanical resin application, highest resin content should be 46.1, not 46.2
  - Non-CR/HS mechanical resin application should be 88 lb/ton, not 87 lb/ton
  - Tooling gel coating should be 440 lb/ton, not 437 lb/ton
- Clarify that the compliant resin/gel coat option, only requires you show that each and every individual resin and gel coat, as applied, meet their individual Table 3 HAP emissions limit in lb/ton

Corrections and Clarifications Planned (Con't)

- Clarify that an existing area source that becomes major is still an existing source

- Add polymer casting and RTM to the list of operations with no requirements (but remember that co-located gel coating operations do have requirements)

- Are considering changing definition of large pultruded parts for existing sources (1000 reinforcements versus glass weight)

- Any other typos or referencing errors that we have found (if you know of any, please send them to barnett.keith@epa.gov)

What is a new Source?

- You commenced construction after August 2, 2001, and

- When you commenced construction, there were no reinforced plastic composites operations at the facility

- Note that the definition above includes moving an existing facility

What is an Existing Source?

- Any source that is not new

- Existing sources are not considered new as a result of reconstruction

Overview of Controls to Meet Emission Limits

- Most existing sources must only meet the existing source floor
  - low HAP resins and gel coats
  - nonatomized application techniques
  - covering open containers, mixers, resin baths
  - add-on controls for continuous lamination/casting
- Existing sources with centrifugal casting and continuous lamination/casting operations that emit over 100 tpy of HAP must
  - Use add-on controls for both centrifugal casting and continuous lamination/casting (95 percent control)
  - Meet the same requirements as other existing sources for their other operations

Overview of Controls to Meet Emission Limits (Con't)

- New sources with HAP emissions below the 100 tpy threshold meet the same limits as existing sources

- New sources at or above the 100 tpy threshold must control the operations below by 95 percent
  - Open Molding
  - Centrifugal Casting
  - Continuous Lamination/Casting
  - Pultrusion
  - SMC/BMC Manufacturing
  - Mixing

Large Parts Exemptions

- There are two different large parts exemptions
- One applies only to existing pultrusion operations
  - Allows pultrusion machines making large parts to substitute "air flow management" for the 60 percent emission reduction requirement
  - In this exemption, a large part is defined as
    - cross sectional area of 60 inches or more and
    - 1000 or more reinforcements
- One applies only to operations at new sources otherwise subject to the 95 percent capture and control requirements
  - Large part production operations are allowed to meet the limits in Table 3, rather then 95 percent capture and control
  - A large open molding part must either exceed
    - 250 cubic feet of volume, or
    - 50 square feet on any one side
  - A large pultruded part must exceed
    - 24 inches outside perimeter, or
    - 350 or more reinforcements

What is the 100 tpy HAP Emission Threshold and How Is It Determined?

- Sum emissions from the all operations potentially subject to 95 percent control prior to any add-on controls

- Calculate these emissions using
  - Equations in Table 1
  - Unified emission factors
  - Other published emission factors
  - Site specific factors if based on emission test data

How do I demonstrate Initial Compliance?

- If you are using add-on controls, you must perform a compliance test prior to the compliance date

- Performance tests methods are EPA Method 18, 25, 25A

- The PTE must be certified using EPA Method 204

- If the PTE does not meet 204 criteria, you must test for capture using EPA Methods 204B-204E

How do I demonstrate Initial Compliance (Con't)?

- For emission limits - perform emission factor calculations as specified in the rule

- For work practice standards - submit a certified statement that the work practice is being performed

- For equipment standards - submit a certified statement that the equipment is in place and meet the requirements specified in the rule

How Do I Demonstrate Initial Compliance for a PTE?

- Determine the equivalent diameters of all NDO and exhausts

- Determine the equivalent diameters of all NDO from HAP emission points and exhausts from NDO (must be at least four)

- Measure PTE surface area (A_T) and NDO surface area (A_N). The ratio of AT/AN must 0.05 or less.

How Do I Demonstrate Initial Compliance for a PTE (Con't)?

- Measure all exhaust flows (Q_O) and all forced makeup air flows (Q_I) using EPA Method 2.

- Calculate the average NDO facial velocity as $FV = (Q_O - Q_I)/A_N$

- FV must be 200 fpm or more; or

- measure pressure differential across enclosure

- differential must be 0.007 inches of water or more

How Do I Demonstrate Initial Compliance for a PTE (Con't)?

- Verify direction of flow is inward for all NDO using streamers, smoke tubes, or tracer gases

- If FV is 500 or more, inward flow verification is not required

Frequently Asked Questions

- If I use more than 1.2 tpy of resin and gel coat (combined) am I subject to the rule?
  - No, you must be a major source of HAP (i.e. area sources are not covered)

- If my emissions are less than 100 tpy am I exempt?
  - Not if you are a major source

- If my resins have no styrene am I covered by the NESHAP?
  - No

Frequently Asked Questions (Con't)

- Should I use the UEF equation for MMA?
  - Not for purposes of complying with this rule. If you have a gel coat with 30 percent styrene, and 5 percent MMA, then the input to the equation in Table 1 is 0.35 (30 percent plus 5 percent, expressed as a decimal). This would include calculations to determine if you are above or below the 100 tpy threshold

- Should I use the UEF equation for MMA when reporting emissions?
  - You should use the most accurate method available for reporting emissions for Title V purposes

Frequently Asked Questions (Con't)

- If I am an existing source and have no continuous lamination/casting or centrifugal casting operations, must I calculate my emissions for purposes of my initial notification?

  - No. If the 100 tpy threshold does not apply to you, then you have no reason to do any of the calculations specified in section 63.5799

- If I build a new building next to my current building, does the new building become a new source?

  - The best source to answer these questions is you permitting authority because the decision may rest on site specific factors

Frequently Asked Questions (Con't)

- If I move do I become a new source?
  - Yes, if the new location does not already have reinforced plastic composites operations.
- If I am an open molder below the 100 tpy emission level and move (becoming a new source), and several years after the move my emissions increase above 100 tpy, do the 95 percent capture and control requirements apply?
  - Yes

Frequently Asked Questions (Con't)

- My gel coat contains alpha-methyl styrene. Should the percentage of this chemical be added to the styrene content?
  - No, alpha-methyl styrene is not a HAP.

- How do I know if my material are resins, and/or thermoset resins?
  - We do not define "resin" and "thermoset resin" in the rule. If you have questions on your materials, ask the materials supplier.

- I use a putty-like filler, is this covered?
  - If the filler contains a resin, that by itself, could be used to make reinforced plastic composites, then it is a filled resin. If the filler does not contain a resin, then it is not covered, even if it contains styrene.

Other Questions?